

### Amendments to the Claims

1. (currently amended) A method for transmitting an input stream of symbols in a multiple-input / multiple-output wireless communications system including  $M$  subgroups of transmitting antennas, comprising:  
selecting, according to channel conditions of the multiple-input / multiple-output wireless communications system,  $L$  subgroups of the  $M$  subgroups of antennas, where  $L < M$ ;  
demultiplexing, the input stream into  $L$  substreams, there being one substream for each one of the  $L$  selected subgroups of antennas;  
adaptively modulating and coding each of the  $L$  substreams to a maximum data rate while achieving a predetermined performance on an associated channel used to transmit the substream; and  
space-time transmit diversity encoding each of the  $L$  coded substreams into a set of output streams, there being one output stream in each set for each antenna of each one of the  $L$  subgroups of antennas; and  
transmitting the set of output streams using the  $L$  subgroups of antennas.

2. (original) The method of claim 1, further comprising:  
feeding back, from a receiver, channel conditions; and  
selecting the  $L$  substreams to be produced by the demultiplexing according to the channel conditions.

- 1 3. (original) The method of claim 2, in which the channel conditions  
2 measure a signal to interference plus noise ratio of the output streams  
3 received in the receiver.
- 1 4. (original) The method of claim 1, in which the adaptive modulation and  
2 coding depends on the number  $L$  of the substreams.
- 1 5. (original) The method of claim 1, in which  $L$  is zero to increase an overall  
2 capacity of the system including a plurality of receivers.
- 1 6. (original) The method of claim 1, in which the adaptive modulating and  
2 coding, further comprises:  
3 coding each substream;  
4 interleaving each coded substream; and  
5 symbol mapping each interleaved substream.
- 1 7. (original) The method of claim 1, further comprising:  
2 demultiplexing each output stream into a plurality demultiplexed  
3 output streams;  
4 multiplying each of the plurality of demultiplexed output streams by  
5 an orthogonal variable spreading factor;  
6 adding the demultiplexed output streams, for each output stream, after  
7 multiplication into a summed output stream corresponding to each output  
8 stream; and  
9 multiplying each summed output stream by a scrambling code.

8. (currently amended) A system for transmitting an input stream of symbols  
in a multiple-input / multiple-output wireless communications system  
including  $M$  subgroups of transmitting antennas, comprising:  
a switch configured to select, according to channel conditions of the  
multiple-input / multiple-output wireless communications system,  $L$   
subgroups of the  $M$  subgroups of antennas, where  $L < M$ ;  
a demultiplexer configured to split the input stream into  $L$  substreams,  
there being one substream for each one ~~of  $L$~~  of the  $L$  subgroups of antennas;  
means for adaptively modulating and coding each of the  $L$  substreams  
to a maximum data rate while achieving a predetermine performance on an  
associated channel used to transmit the substream; and  
means for space-time transmit diversity encoding each of the  $L$  coded  
substream into a set of output streams, there being one output stream in each  
set for each antenna of each one of the  $L$  subgroups of antennas.